
Principles of Environmental Restoration

Principle 3 – Early Identification of Likely Response Actions

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Early identification of likely response actions is possible, prudent, and necessary

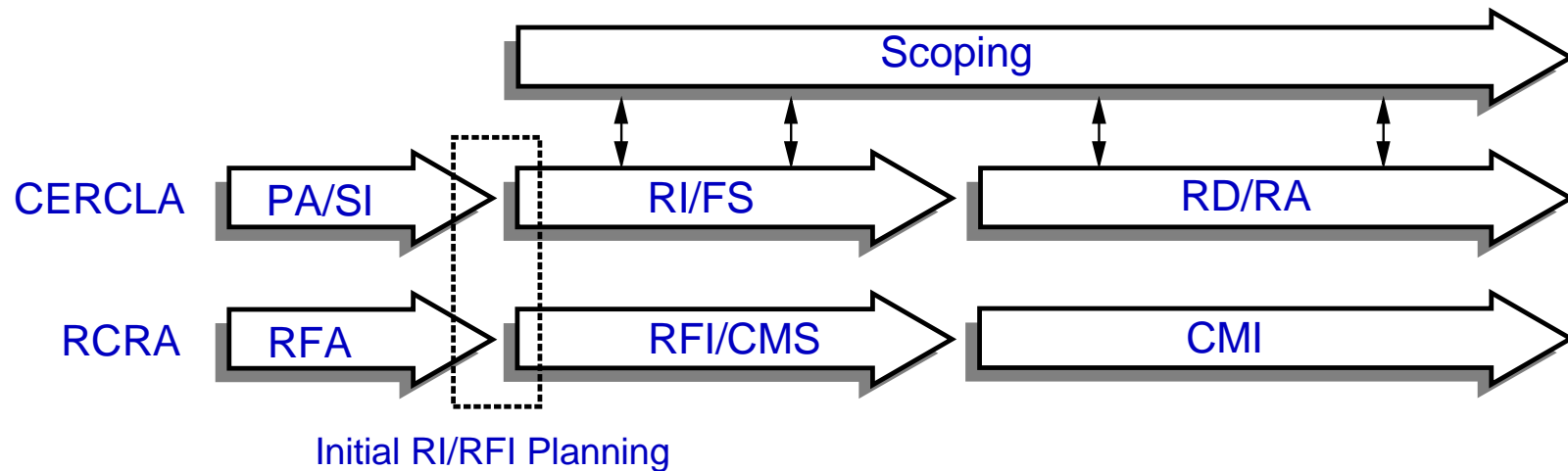
- Session objectives:
 - Explain importance of early identification of response options
 - Explain how to integrate early and interim actions into environmental restoration planning

Early identification of likely response actions allows:

- Early focus on appropriate remedial action objectives
- Early consideration of potential response action implications
- Development of a hierarchy of probable technologies for a defined problem
- Early consideration of presumptive remedies and generic approaches and a phased response to remediation
- Scope of decision documents, balancing between broad objectives and well defined criteria

Timing

Traditional steps in the ER process



Building an effective project team

Problem identification and definition

Early identification of response actions

Management of uncertainty

Focus on identifying likely response actions

- Technical
 - Identifying a hierarchy of probable technologies
 - Identifying fatal flaws for any of the probable technologies
 - Identifying cost saving opportunities through innovations
- Regulatory
 - Identifying appropriate implementation authorities
 - Identifying how to phase response actions to optimize project schedules

Basis for prioritizing technologies

- Presumptive remedies
- Characteristic uncertainties
- Cost-effectiveness profile
- Public acceptance
- Ability to understand and manage uncertainties associated with technology

Identifying response actions is iterative

- Initiate in scoping as problems are defined
- Re-evaluate as a part of the continual refinement and transition of the problem statement to a close-out report
- Where appropriate, evaluate across operable units/sites to identify innovation/integration opportunities

Response action design

- Response action design can be initiated early *if*:
 - A presumptive remedy or obvious solution exists
 - A phased approach is used, i.e., removal, interim, or early actions are appropriate
 - Data needs can be met as easily during design as during characterization phase
 - Uncertainties can be managed during the response
 - Core team reaches consensus